

CLAIMS

1. A circuit board comprising a first conductor layer formed on a core and a first electrically insulating layer formed on said first conductor layer, wherein:

the surface roughness Ra of said first conductor layer is 0.1nm or more and less than 100nm; and

a first primer layer including a thiol compound (a) as a main material is formed between said first conductor layer and said first electrically insulating layer.

2. The circuit board according to claim 1, wherein the surface roughness Ra of said first electrically insulating layer is 0.1nm or more and 400nm or less.

3. The circuit board according to claim 2, further comprising:
a second conductor layer;
a second primer layer including a thiol compound (b) as a main material; and

a second electrically insulating layer,
wherein said the second conductor layer, said second primer layer, and said second electrically insulating layer are stacked on said first electrically insulating layer in this order.

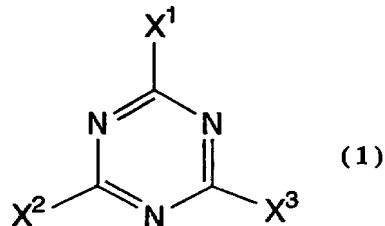
4. The circuit board according to claim 3, wherein the surface roughness Ra of said second conductor layer is in the range from 0.1nm to 1μm.

5. The circuit board according to claim 3, wherein the surface roughness Ra of said second electrically insulating layer is 0.1nm or more and 400nm or less.

6. The circuit board according to claim 1, wherein said thiol compound

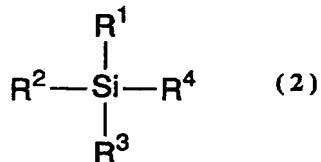
(a) is a compound expressed by the following formula (1) or (2) or an alkali metal salt thereof,

[Chemical Formula 1]



(in formula (1), X¹ to X³ are each independently -SH, -SR-NR'R'', or -SM (R, R' and R'' are each independently linear or branched alkyl group having 1 to 5 carbons and M is an alkali metal) and at least one of these is -SH)

[Chemical Formula 2]



(in formula (2), R¹ to R⁴ are each independently linear or branched alkyl group having 1 to 5 carbons and having one or more -OR (R is a linear or branched alkyl group having 1 to 5 carbons) or -SH and at least one of these is a linear or branched alkyl group having 1 to 5 carbons and having one or more -SH).

7. The circuit board according to claim 3, wherein said thiol compound
(b) is a compound expressed by the foregoing formula (1) or (2) or an alkali metal salt thereof.

8. The circuit board according to claim 6, wherein said thiol compound
(a) is a compound expressed by said formula (1) and X¹ to X³ in said formula (1) are all -SH.

9. The circuit board according to claim 7, wherein said thiol compound

(b) is a compound expressed by said formula (1) and X¹ to X³ in said formula (1) are all -SH.

10. The circuit board according to claim 1, wherein said first electrically insulating layer is formed by curing a curable resin composition containing an alicyclic olefin polymer.

11. The circuit board according to claim 3, wherein said second electrically insulating layer is formed by curing a curable resin composition containing an alicyclic olefin polymer.

12. The circuit board according to claim 1, wherein given that a relative permittivity and a relative magnetic permeability of said first electrically insulating layer are ϵ_r and μ_r , respectively, at least part of said first electrically insulating layer satisfies a relationship of $\epsilon_r \leq \mu_r$.

13. The circuit board according to claim 3, wherein at least part of said second electrically insulating layer satisfies the relationship of $\epsilon_r \leq \mu_r$ when the relative permittivity and the relative magnetic permeability of said second electrically insulating layer are represented by ϵ_r and μ_r , respectively.

14. An electronic device comprising a circuit board, wherein:
said circuit board comprises a first conductor layer formed on a core and a first electrically insulating layer formed on said first conductor layer, the surface roughness Ra of said first conductor layer is 0.1nm or more and less than 100nm; and
a first primer layer including a thiol compound (a) as a main material is formed between said first conductor layer and said first electrically insulating layer.

15. A method of manufacturing a circuit board comprising the steps of:
forming a first conductor layer on a core;
then bringing the board surface formed with said first conductor layer into contact with a metal corrosive agent to form the first conductor layer having

the surface roughness Ra of 0.1nm or more and less than 100nm;

then bringing a primer composition containing a thiol compound (a) into contact with the board surface formed with said first conductor layer to form a first primer layer;

then stacking on said first primer layer an uncured or semicured resin mold made of a curable resin composition; and

then curing said resin mold to form a first electrically insulating layer.

16. The method according to claim 15, further comprising the step of bringing the surface of said first electrically insulating layer into contact with an oxidizing compound to adjust the surface roughness Ra thereof to 0.1nm or more and 400nm or less.

17. The method according to claim 15, further comprising the steps of: forming a second conductor layer on the first electrically insulating layer having the surface roughness of 0.1nm or more and 400nm or less,

then bringing a primer composition containing a thiol compound (b) into contact with a board surface formed with said second conductor layer to form a second primer layer; and

then stacking on said second primer layer a film-shaped molded article made of a curable resin composition; and

then curing said film-shaped molded article to form a second electrically insulating layer.

18. The circuit board manufacturing method according to claim 16, further comprising the steps of:

forming a second conductor layer on the first electrically insulating layer having the surface roughness of 0.1nm or more and 400nm or less;

then bringing a primer composition containing a thiol compound (b) into contact with a board surface formed with said second conductor layer to form a second primer layer; and

then stacking on said second primer layer a film-shaped molded article made of a curable resin composition; and

then curing said film-shaped molded article to form a second electrically insulating layer.